TEXTILE TECHNOLOGY DIGEST

VOLUME 13 MARCH, 1956 NUMBER 3

ABSTRACTS

FIBERS A

NATURAL FIBERS A 1

Certain physical properties of selected samples of chemically modified cottons.

J. N. Grant (Southern Regional Research Laboratory). *Textile Research J. 26:* 74-80 (January, 1956).

Measurements are given on certain physical properties of fibers and yarns for cottons which were chemically modified by mercerization, ethylamine decrystallization, aminization, carboxymethylation, acetylation, and cyanoethylation. The changes in physical properties are shown to be affected by the type of modification, the extent of reaction, and the tensional forces on the yarns during the treatment. A spread in the per cent change was found when untreated cottons with their natural noncellulosic constituents were chemically treated under controlled conditions. 22 references.

The properties of cotton reacted with beta-propiolactone.

R. M. Reinhardt, J. D. Reid, and G. C. Daul (Southern Regional Research Laboratory). *Textile Research J. 26:* 1-9 (January, 1956).

A number of the textile and chemical properties of cotton reacted with beta-propiolactone have been investigated and are reported. Differences in the properties of the products of the reflux and of the alkali methods of treatment are shown. Reaction of cotton with beta-propiolactone yields a cellulose derivative with a bound graft polymer. The results of this unusual reaction are shown by optical means with microscopic cross sections and electron micrographs, by changes in X-ray diffraction patterns, by influence on textile properties, by chemical effects such as saponification to yield carboxyethylcellulose, and by the production of unsaturation in the cellulose derivative. 19 references.

The relation of the non-cellulosic constituents of flax fiber to its spinning quality.

I. F. Couchman. *J. Textile Inst. 46:* T742-T758 (December, 1955).

As the nature and manner of association of the non-cellulosic constituents in flax fiber are probably related to the fiber properties and spinning quality, the composition of fractions soluble in water and various concentrations of sodium hydroxide have been compared. There were no fundamental differences between the components of each soluble fraction, but the amounts of materials present varied with different qualities of fiber, the variations being most marked in the more easily soluble fractions. 16 references.

The breaking strength of twisted bundles of jute fiber and its relation to spinning quality.

B. K. Chakrabarti. *Textile Research J. 26:* 17-23 (January, 1956).

In this paper the author outlines a technique which conceivably might be applied to the prediction of strength of yarns composed of fibers other than jute. He shows that by means of a comparatively few tests of the breaking strength of jute fibers as much information with regard to the strength of the yarns can be obtained as from the simultaneous consideration of a number of other fiber characteristics. 10 references.

The relation between wool felting and single-fiber properties.

A. K. van der Vegt and G. J. Schuringa (Centraal Laboratorium T.N.O., Delft, Holland). *Textile Research J. 26:* 9-16 (January, 1956).

The relation between the rate of felting of wool yarns as a function of the applied forces and the frictional and elastic properties of the single fibers was investigated. One series of experiments was performed on a number of yarns in which the frictional properties of the fibers were modified to various degrees by chemical treatments; in another series the fiber stiffness was systematically varied by applying various aqueous solutions. The results of the experiments show that when the force affecting the fibers is smaller than the with-scale frictional resistance, no shrinkage occurs; when it attains a higher value, shrinkage of the yarn per time affected is proportional to the applied force minus the with-scale kinetic friction and inversely proportional to the Young's modulus of the fibers; when the force exceeds the antiscale friction as well, the shrinkage becomes more or less independent of the force. 16 references.

MAN-MADE FIBERS A 2

Man-made fibers data sheets: polyacrylonitrile fibers.

P. A. Koch. *Modern Textiles Mag. 37:* 46-54 (January, 1956).

Trade names, development, manufacture, properties, products, applications, etc. Table of acrylic fibers. 105 references.

Spun-dyed viscose rayon staple.

Courtaulds Ltd. *Textile Merc. 134:* 154-156 (January 27, 1956).

Uses, properties and processing of Fibro-Duracol, spun-dyed viscose rayon staple.

Vicara.

Modern Textiles Mag. 37: 57-63, 69 (January, 1956).

Manufacture and properties, by G. L. Walker, p. 57-58, 61; *Woven fabrics,* by A. Greenfield, p. 59, 69; *Processing and dyeing,* by L. Billings, p. 60-61; *Advertising and promotion,* by R. H. Stinnette, p. 62-63. 7 references.

YARN PRODUCTION B

Spinning nylon carpet yarns on the cotton system.

E. I. du Pont de Nemours and Co., Inc. Wilmington, January, 1956. 3 p. Technical Information Bulletin N-39.

Polyamide- and polyester-fibers in worsted spinning.

H. Ott. *Textil-Praxis (English ed.) No. 4:* 145-148 (November, 1955).

Processing hints to worsted spinners of Perlon and Diolen.

How to process Dacron-cotton blends.

Textile World 106: 105-106 (February, 1956).

A blend of 65% Dacron and 35% cotton gives a good balance of price and performance. For successful processing lubricate Dacron staple that will be subjected to high drafts in roving and spinning, blend during breaker drawing, and avoid fiber stretching in spinning.

OPENING, PICKING, FIBER PREPARATION B 1

Mill test procedures. Part 1. Mill testing for opening and picking.

N. L. Enrick. *Modern Textiles Mag. 37:* 34, 37-38 (January, 1956).

This first article in a series covers the test procedures applicable in opening and picking, including for each the purpose, sampling, frequencies, and test results evaluation. This series is designed as a sequel to two prior series on *Quality control through statistical methods* and *Modern mill controls.*

Improvement of fiber mixtures by means of the automatic Rieter blender.

F. Freysch. *Textielwezen 11, No. 10:* 27-29 (1955); *in French.* Through *BCIRA 36:* 16 (1956).

Constructional details and mechanism of the Rieter opener-blender are described and illustrated.

CARDING AND COMBING B 2

Card-flat grinding for lower-cost, better sliver.

A. L. Landau. *Textile World 106:* 98-99, 194-196 (February, 1956).

This article tells why flats require proper care and how to grind them properly.

The effect of material feeding on the regularity of the card web.

G. Liebig. *Z. ges. Textil-Ind. 57, No. 20:* 1302-1306 (1955); *in German.* Through *BCIRA 35:* 800 (1955).

Reference is made to automatic weighing devices and their mechanisms, web formation without visible grooves, the effect of feeding devices on the material fed, the equalizing action of the taker-in, and the action of the feeding devices on the second breaker with ribbon feed.

The universal card-spinning machine (Franz Muller system).

F. Müller. *Melliand Textilber. 36, No. 10:* 1059-1063 (1955); *in German.* Through *BCIRA 35:* 800 (1955).

The advantages claimed for the new (roller and clearer) construction, described and illustrated, comprise: increase of production, improvement of quality, reduction of total costs, 50 per cent savings of space, power, investment costs, and operatives, and appreciable reduction of waste.

DRAWING AND ROVING B 3

Kepa drawing system in the cotton spinning mill.

O. Reinhardt. *Textil-Praxis (English ed.) No. 4:* 149-153 (November, 1955).

The Kepa high-draft drawing system is discussed. Diagrams and photographs.

The mill of today. Part 43. Fundamentals of drafting. (Section 1).

R. Z. Walker. *Textile Bull. 82:* 70-72 (January, 1956).

Roving frame adjustment and its effect on the roving.

W. Wegener and H. E. Braune. *Melliand Textilber. 36, No. 10:* 982-988 (1955); *in German.* Through *BCIRA 35:* 801 (1955).

It is shown that, at an optimum adjustment of the roving frame, deviations of the order of 2 per cent in the mean count are obtained. Continuous control of the count variations in the individual batches by means of suitable devices or by hand-sorting is recommended.

On count variations.

O. John. *Textil-Praxis 10, No. 10:* 1001-1002 (1955); *in German.* Through *BCIRA 36:* 17 (1956).

The count differences in the yarn of the front and back rows of bobbins on the speed frame are attributed to a "false" draft occurring between the drawing passage and bobbin (in the yarn length from (1) the presser to the flyer top and (2) the flyer top to the rollers). The "false" draft between flyer top and rollers can be eliminated by a modification of the flyer top (developed by the author and patented by the Crefelder Baumwoll-Spinnerei).

SPINNING, WINDING, TWISTING B 4

New false twist machine.

Ernest Scragg and Sons Ltd. *Textile Merc. 134:* 57-58 (January 13, 1956); *Textile Wkly. 56:* 51-53 (January 6, 1956).

This new false twist machine for the production of crimped nylon and other synthetic fiber yarns telescopes five processes into one, in a continuous operation from feeder bobbin to take-off package, with a high production speed, accurate temperature and tension control of each thread and substantial economies in labor, power consumption, and floor space.

Count variation in condenser spinning.

A. Linnert (Shirley Institute). *Textile Wkly. 56:* 102-108 (January 13, 1956).

Measurement of count variation, survey on yarn from Derby doubler system, and practical steps to reduce count variation.

Critical observations on spindle drives in two-roller spinning.

R. Locker. *Z. ges. Textil-Ind. 57, No. 21:* 1362-1368 (1955); *in German.* Through *BCIRA 36:* 17 (1956).

The disadvantages of using ordinary spindle bands made from cotton yarn and the development of hook and patent cords are discussed, and reference is made to the application of continuous elastic bands in twisting tube drives and selfactor mules.

YARNS B 5

Some observations on the structure of a multi-colored yarn.

H. R. Boswell and P. P. Townend (Leeds University). *(Letter to the editor). J. Textile Inst. 46:* T778-T779 (December, 1955).

The causes of thin thread lengths in spun rayon yarns.

G. Porsche. *Textil-Praxis 10, No. 10:* 987-900 (1955); *in German.* Through *BCIRA 36:* 17 (1956).

The causes of thin sections in yarn (loss of twist, unsuitable winding machine, faults in the mixture, uneven humidity of material and workroom, faulty performance of cards, flyer frames, etc.) are discussed and measures for their prevention are suggested.

The strength of cotton and spun rayon yarns.

G. Schmalfuss. *Textil-Praxis 10, No. 10:* 991-992 (1955); *in German.* Through *BCIRA 36:* 36 (1956).

An attempt is made to show, without derivation of mathematical formulae, the origin of yarn strength, how it can be increased, how strength properties can be compared with each other, and and in what way the strength of the material can be utilized.

Taslan textured yarn.

J. T. Rivers, Jr. (E. I. du Pont de Nemours and Co.). *Mech. Eng. 78:* 7-10 (January, 1956).

The properties, uses, and processing of Taslan yarns are discussed and compared with continuous filament and spun staple yarn systems.

FABRIC PRODUCTION C

WARPING, SLASHING, YARN PREPARATION C 1

The importance of squeezing pressure reduction during the slow running of warp sizing machines.

E. Michelen. *Textil-Praxis (English ed.) No. 4:* 173-177 (November, 1955).

The effect of slow running of the sizing machine on the uniformity of sizing is investigated. Experimental results show that the abrasion resistance during this period decreases by 30-40 per cent. The sizing effect can be improved by reducing the pressure of the squeezing roller. Various devices and their mechanisms are described.

Slasher sizing Dacron filament yarns.

E. I. du Pont de Nemours and Co., Inc. Wilmington, January, 1956. 4 p. Technical Information Bulletin D-61.

A summary of information on the sizing and afterwaxing of warps for broad woven fabrics.

Some properties of a homogenized sizing agent.

K. Ramaszeder. *Industrie Textile:* 743-746 (October, 1955); *in French.* Through *BCIRA 36:* 20 (1956).

Comparison is made between the properties of cooked and homogenized starch products and the advantages of the latter are pointed out. The strength of size films was found to be a criterion of their quality.

Yarn sizing.

Simon Megson, Ltd. *Textile Wkly. 56:* 54-56 (January 6, 1956).

Zymetex, a new sizing agent based on tallow, is made in both solid and liquid forms.

Comparing the merits of big-cylinder, small-cylinder and hot air slashers.

R. L. Mundhenk (West Point Foundry and Machine Co.). *Textile Bull. 81:* 88-93 (December, 1955).

New concept in filling yarn preparation: Unifil loom winder.

Universal Winding Co. *Textile Age 20:* 30-34 (February, 1956).

The Unifil loom winder is a mechanism designed and built right into the loom itself, which winds, transfers to the shuttle, strips, and returns empty quills to the winder.

WEAVING C 2

The suitability and economy of various types of weft bobbins in the weaving mill.

E. O. Hesse. *Z. ges. Textil-Ind. 57, No. 20:* 1308-1309 (1955); *in German.* Through *BCIRA 35:* 804 (1955).

The suitability of pin cops from selfacting mules and of tubular cops for use as weft bobbins for various types of yarn, and their advantages and disadvantages, are discussed.

Tensioning and braking of warp beams.

J. Baudry. *Industrie Textile:* 760-762 (October, 1955); *in French.* Through *BCIRA 36:* 22 (1956).

The device described (developed by the Société Cornu et Fils) consists of a feeler fixed at one point to the loom frame, its free arm resting on the warp threads wound on the warp beam. The feeler is drawn nearer to the warp beam axis as the warp unwinds, the tensioning device of the braking mechanism starting to operate by the action of an adjusting lever, one end of which is connected to the feeler on the loom frame and the other to the tensioning device. The apparatus makes it possible to maintain a constant warp tension and, consequently, to ensure a very uniform density over the whole length of the cloth piece.

Innovations on Verdol jacquard machines for continuous paper cards.

H. Dersen. *Melliand Textilber. 36, No. 10:* 1004-1006 (1955); *in German.* Through *BCIRA 35:* 804 (1955).

Warp protectors on fast and loose reed looms.

J. Starkie. *Textile Mfr. 82:* 25-27 (January, 1956).

When a shuttle fails to reach its box, due to some fault in the picking or shedding mechanism, provision must be made to prevent a breakage of warp when the reed moves forward with the shuttle between it and the cloth fell. Two systems are used, the fast reed warp protector, which brings the loom to a sudden stop before the lay reaches a position to cause breakage, and the loose reed warp protector, which permits the reed to move backwards under pressure from the shuttle against it, this pressure being provided by the warp tension.

A study in loom fixing. Part 4.

F. D. Herring. *Textile Bull. 82:* 74-77 (January, 1956).

Part 4 discusses jobs that are the most difficult for the average fixer: throwing the shuttle out, placing the pickers, and setting and timing the harness.

Genuine limitations of large-size shuttles in wool weaving.

K. Schwabe. *Textil-Praxis (English ed.) No. 4:* 161-166 (November, 1955).

The advantages and disadvantages of large-size shuttles in wool weaving are studied.

How to fur a shuttle.

A. J. Grunfeld. *Textile Forum 12:* 16-18 (December, 1955).

Step by step directions are given. Photographs.

Tips on weaving poplins, broadcloths, oxfords.

Textile Age 20: 50-52 (February, 1956).

Points to watch for in weaving and in processing before weaving to achieve the highest possible quality.

Yarn fatigue and weaving productivity: towards a formula for cloth set and loom settings.

N. S. Borodovskii. *Man-Made Textiles 32:* 52-54 (December, 1955; 52-54 (January, 1956).

The researches described here show that there is an endurance limit for fibers subjected to repeated stretching which bears no relationship to the strength and elongations determined by static tests, but which should be considered in relation to the stresses set up in the warp shed during the weaving process. As a consequence a mathematical basis for co-ordinating yarn quality as assessed by its endurance under repeated stressing, cloth construction and density, and loom settings, can be evolved which will result in a reduction in end-breakages and an increase in productivity. This article is based on original published work in Russian, by N. S. Borodovskii, which appeared in *Tekstil'naya Promyshlennost.*

Automatic versus Lancashire looms: a cost comparison relating to spun rayon.

P. A. Mars and D. Leech. *J. Textile Inst. 46:* P799-P812 (December, 1955).

After a discussion of the line of approach to carrying out surveys and making cost comparisons, the author explains in detail his method of calculation and then gives his results. Tables. Graphs.

A method for determining the cost of weaving.

A. Barfety. *Industrie Textile:* 747-757 (October, 1955); *in French.* Through *BCIRA 36:* 45 (1956).

In this study, the author gives a simple practical method by means of which it is possible to calculate accurately the cost per meter of the fabric, taking into account all processing stages and variable factors. Examples and diagrams are given.

KNITTING C 3

Use of step numbers as design basis.

W. Davis. *Hosiery Times 29:* 51-55 (January, 1956).

Making use of step or move numbers for new patterns suitable for every branch of knitwear manufacture.

New jacquard jersey machine.

J. B. Lancashire. *Hosiery Trade J. 63:* 66-69 (January, 1956).

High production and wide scope for patterning in surface effect and color are claimed for the jacquard circular rib machine, Mellor Bromley type 5/RLGS/24. It is offered with 30-inch needle cylinder in all normal gauges up to and including 18 x 18 needles per inch. There are 24 feeders on the machine and every second feeder incorporates a four-color striping unit, a compact overhead stand giving accommodation for 60 yarn packages, with top and bottom stop motions for each thread. Diagrams. Photographs.

Hosiery machine builder in 1955: a review of technical progress.

J. Rab. *Hosiery Times 29:* 17-24, 86-89 (January, 1956).

A progress report on developments in knitting machinery during 1955.

Moncenisio tricolor machine.

S.p.a. Officine Moncenisio. *Hosiery Trade J. 63:* 78-79 (January, 1956).

This three-feeder double cylinder machine for the manufacture of jacquard hosiery features facilities for dismantling when necessary and accessibility of the knitting elements. Instead of

using levers and rods, movements are transmitted by balls contained in flexible tubes and thus a much clearer view than usual can be obtained of the knitting actions, while providing positive movement and control.

FABRICS C 4

The design and laboratory evaluation of an improved Navy overcoat fabric.

J. J. Press. *Textile Research J. 26:* 23-31 (January, 1956).

Analysis shows the 30-oz kersey fabric used in the enlisted man's overcoat to be too heavy and warm under still-air conditions, to be inefficient in resisting wind penetration under adverse conditions, and to have limited use life because of the rate at which it becomes threadbare. New 22-oz fabrics, in melton and kersey finishes, have been engineered to incorporate improved functional characteristics. On the basis of laboratory evaluation, the 22-oz fabrics show considerable promise for wool conservation while maintaining or improving the desired functional characteristics of the 30-oz kersey. 4 references.

Design in woven structure. Part 38. Effects in sponge weaves.

D. C. Snowden. *Wool Rev. 27:* 28-29 (January, 1956).

Black specks and stains on woven cloth.

A. Agster. *Textil-Praxis (English ed.) No. 4:* 153-158 (November, 1955).

These defects in the woven fabric may be due to fragments of husk, stem, leaf and capsules, lubricating oil, and tar. Differentiation between the various spots and their origin are discussed and their characteristics are summarized in a table.

Handbook of twisting. Chapter 7. Effect of twist on appearance.

N. Truslow. *Textile Bull. 82:* 92-97 (January, 1956).

FINISHING AND CHEMICAL PROCESSING D

Effect of colloidal silica treatments on sizing and finishing characteristics of cotton yarns.

H. M. Brown, J. H. Langston, and E. A. Murray (Clemson College). *Textile Research J. 26:* 40-43 (January, 1956).

Cotton in lap form was treated with a colloidal silica compound, and together with an untreated lap was processed into 15/1, 36/1, and 50/1 yarns. Samples of these yarns were used for control, for mercerizing, for bleaching, and for dyeing. Analyses of ash content were made. In addition, other samples of the yarns were used to assess the reaction to slashing, desizing, and abrasion. In general, the presence of colloidal silica, on medium and fine carded yarns, did not affect the operations of mercerizing, bleaching, and dyeing. Yarn strength differences between treated and untreated samples were of the same order after as before each of these chemical processes. Quantitative tests (ash-content analyses) to determine the effect of these processes on the permanence of the colloidal silica on the fiber were inconclusive. 5 references.

CHEMICAL PROCESSES D 1

Textiles.

J. F. Krasny and M. Harris. *Ind. Eng. Chem. 48:* 35A-37A (January, 1956).

Chemical process industries: 1955 annual review.

One-step process for the cyanoethylation of cotton.

A. H. Gruber and N. M. Bikales (American Cyanamid Co.). *Textile Research J. 26:* 67-73 (January, 1956).

A simplified one-step process for the partial cyanoethylation of cotton yarn and stock in the package dyeing machine is described. The new feature of this process consists of mixing the required amount of caustic solution with the acrylonitrile, circulating the mixture cold until even distribution of the caustic is obtained on the cotton, and only then heating to reaction temperature. 8 references.

Improved weather resistance by acetylating vat-dyed cotton.

W. N. Berard, S. G. Gremillion, Jr., and C. F. Goldthwait (Southern Regional Research Laboratory). *Textile Research J. 26:* 81-86 (January, 1956).

Cotton has been made unusually resistant to degradation by weather by first dyeing it with certain light-stable vat dyes and following this with partial acetylation. Vat dyeing alone or partial acetylation alone do not make cotton significantly

more resistant to deterioration by sunlight than undyed fabrics, except for a few colors which do have a protective effect. However, when these two processes are combined excellent resistance to solar cesses are combined excellent resistance to solar rot-resistance of partially acetylated cotton. Data were obtained on a number of individual vat-dyed and vat-dyed and acetylated cotton materials that had been exposed to outdoor weathering. From the results of these tests, it is estimated that the combination of vat dyeing with light-fast colors and acetylating may more than double the outdoor service life compared to cotton vat dyed only, or acetylated only, with somewhat better color retention when the cotton has been dyed and acetylated. 18 references.

The cyanoethylation of cotton.

J. Compton, W. H. Martin, B. H. Word, Jr. and R. P. Barber (Institute of Textile Technology). *Textile Research J. 26:* 47-66 (January, 1956).

Methods for the cyanoethylation of cotton fiber, yarn, and fabric in laboratory and pilot plant are discussed in detail. 22 references.

A study of rayon in tufted carpeting.

L. L. Walmsley, W. S. Sollenberger and D. P. Feyler (American Viscose Corporation). *Am. Dyestuff Reptr. 45:* P30-P33 (January, 16, 1956).

Data are presented relative to the dyeing and finishing of 100% rayon and rayon blended with nylon, acetate, and wool in tufted carpeting. Factors which the dyer must consider in piece dyeing and stock dyeing with direct or vat dyestuffs are discussed along with test methods and end-use specifications. Some emphasis is placed on the necessity for dyestuff selection as related to fastness requirements, level dyeing, and suitability to withstand carpet cleaning and spot-removal techniques. Causes of warp streaks in rayon carpeting are given and methods of isolating some causes described. Data on the general use and value of soil-resist treatments and on discoloration in finished carpeting are given.

Permanent static reduction in carpets of du Pont nylon.

E. I. du Pont de Nemours and Co., Inc. Wilmington, January, 1956. 2 p. Technical Information Bulletin N-49.

A conductive latex, applied in place of regular latex, reduces static formation in nylon carpets below that of untreated wool carpets.

Reaction of cellulose with dimethylol- and monomethylolureas.

R. Steele and L. E. Giddings, Jr. (Rohm and Haas Co.). *Ind. Eng. Chem. 48:* 110-114 (January, 1956).

Dimethylol- and monomethylolurea have been studied as prototypes of urea-formaldehyde resins which are difunctional and monofunctional, respectively, with respect to cellulose. When applied to cotton and rayon fabrics with an acid catalyst, analysis and solubility determinations indicated that monomethylolurea forms chains three or four urea residues long, attached at one end to the cellulose. Dimethylolurea produces cross links that average about two urea residues long. On rayon fabric, equal quantities of the dimethylol or monomethylol product produce essentially the same degree of crease recovery. On cotton, dimethylolurea cross links are much more effective than monomethylolurea side chains. This is explained on the basis of difference in chemical accessibility in the two fibers and the resulting difference in effective resin concentration. 8 references.

Intermediate for flame-resistant polymers: reactions of tetrakis (hydroxymethyl) phosphonium chloride.

W. A. Reeves and J. D. Guthrie (Southern Regional Research Laboratory). *Ind. Eng. Chem. 48:* 64-67 (January, 1956).

The polymer-forming properties of tetrakis (hydroxymethyl) phosphonium chloride have been investigated for the purpose of finding flame-resistant resins. The crystalline compound is soluble in water and some organic solvents, and reacts with most substances known to react with aqueous formaldehyde. The polymers, usually thermosetting resins, resemble resins from formaldehyde or polyhydric alcohols in physical properties, but differ significantly in combustion characteristics. Tetrakis (hydroxymethyl) phosphonium chloride reacts with many compounds containing trivalent nitrogen. Of particular significance are the melamine and urea resins, which impart flame resistance to cellulosic fibers. Phosphorus-containing phenolic resins are readily obtained by reaction with phenols. It also reacts as an alcohol by forming polymers with anhydrides of polycarboxylic acids. 8 references.

Finishing shrinkproof woolen material.

R. Schmidt. *Textil-Praxis (English ed.) No. 4:* 183-188 (November, 1955).

A number of suggestions are made for the proper finishing of woolen fabrics so that the finished fabric will not undergo further dimensional change either in length or width.

Kier boiling.

C. Garrett (Lumsden & Mackenzie Ltd). *J. Soc. Dyers Colourists 71:* 830-839 (December, 1955).

The reasons for tendering in kiers are discussed, and the essential conditions to avoid tendering are given. Steam supply is considered, and operational control is described. The importance of fluidity control is stressed. 3 references.

Theory and practice of enzymatic desizing.

J. Voss. *Am. Dyestuff Reptr. 45:* 58-63 (January 30, 1956).

Translated from the German journal *Melliand Textilberichte 35, No. 7:* 762-764; *No. 8:* 876-880 (1954). See *TTD 12:* 62 (1955).

The chemical and physical behavior of glass fibers in water.

W. Bobeth and H. Dittmann. *Faserforsch. u. Textiltech. 6, No. 9:* 391-398 (1955); *in German.* Through *BCIRA 35:* 808 (1955).

Experiments have shown that the improved wet strength of glass yarns and fabrics brought about by cation resins is not due to an exchange of alkali ions. No satisfactory explanation can be given of the factors causing the loss of strength of wet glass yarns and fabrics as compared with individual fibers which are little affected by water.

Some experiments on the condensation of urea and formaldehyde on cellulosic materials.

J. Alvsaker and H. A. Turner (University of Manchester). *J. Soc. Dyers Colourists 71:* 797-816 (December, 1955).

Experiments have been carried out in which the drying and high-temperature treatments of viscose rayon, impregnated with urea-formaldehyde precondensates, have taken place both in ventilated and in closed vessels. In this way the condensation has been effected with different concentrations of formaldehyde vapor in the surrounding air. These variations in the post-impregnation treatments affect the following quantities—proportion of resin fixed, fastness of the resin to removal by washing, crease resistance, stiffness, tensile strength, extension at break, and water retention. The relations between conditions of treatment and corresponding changes in the properties of the treated materials are discussed. 77 references.

Textured carpets of du Pont nylon.

E. I. du Pont de Nemours and Co., Inc. Wilmington, January, 1956. 2 p. Technical Information Bulletin N-50.

Twist-setting nubby and frieze carpet yarns.

Solvent scouring of raw wool.

F. O. Howitt. *Wool Record 89:* 139-142 (January 19, 1956).

Advantages and disadvantages of a solvent scouring process developed in Australia are discussed.

Observations on American bleaching and dyeing practice.

J. K. Skelly. *J. Soc. Dyers Colourists 72:* 7-14 (January, 1956).

The applications of the established American bleaching and dyeing processes for cotton piece goods are discussed. An outline is given of the Becco, du Pont, and Mathieson continuous bleaching systems. The practical uses of the Williams unit and pad-steam dyeing ranges are indicated. Particular attention is paid to the factors influencing the advantages and limitations of each of these processes. 25 references.

Accelerated hypochlorite bleaching of cotton.

R. L. Derry (British Cotton Industry Research Assoc.). *J. Soc. Dyers Colourists 71:* 884-893 (December, 1955).

An attempt was made to determine the conditions under which warm or hot hypochlorite solutions can safely be used in cotton bleaching. It is shown that alkaline hypochlorite liquors, buffered at pH 10.5 or above, are very stable even on boiling. If the time of bleaching is reduced by a factor of 2.3 for each 10°C. rise in temperature, the quality of the bleach is maintained without appreciable increase in the extent of modification of the cellulose. 8 references.

Bleaching of nylon and nylon blends.

S. Shaw and W. S. Willson (British Nylon Spinners Ltd). *J. Soc. Dyers Colourists 71:* 857-873 (December, 1955).

The effect of chemical bleaching agents on the strength and color of all-nylon textiles, and on the tensile strength and abrasion resistance of wool-nylon, cotton-nylon, and staple viscose rayon-nylon blended fabric to give an acceptable white have been described. Removal of heat-setting discoloration from all-nylon material has been discussed, and also the use and misuse of fluorescent brightening agents. The bleaching agents selected for investigation were sodium hypochlorite, hydrogen peroxide, peracetic acid, and sodium chlorite, and details are given of recommended methods of application. 21 references.

Some aspects of present-day bleaching practice.

N. F. Crowder and W. A. S. White (Imperial Chemical Industries Ltd.). *J. Soc. Dyers Colourists 71:* 764-776 (December, 1955).

A general review is given of present-day practice for bleaching the principal textile fibers, the emphasis being mainly on cotton. Modern trends and developments are discussed, including methods of continuous bleaching and the use of sodium chlorite. Experimental results are quoted in connection with the peroxide bleaching of cotton at various pH values and the application of peroxides for combined desizing, scouring, and bleaching of rayon-staple fabrics. 43 references.

Notes on the peroxide bleach.

Textile Mfr. 82: 39-41 (January, 1956).

Nature, stability, effects of kier boiling, continuous bleaching procedure, combined chlorine and peroxide method, combined scouring and bleaching, and testing are considered. 6 references.

Developments in the use of sodium chlorite as bleaching agent.

H. W. Hundt. *SVF Fachorgan Textilveredlung 10, No. 10:* 538-543 (1955); *in German.* Through *BCIRA 36:* 27 (1956).

Two recently developed bleaching methods, which were successfully introduced in practice, are described; they are (1) the continuous chlorite bleaching process, according to the Degussa system (using an impregnating vat and a J-box) and (2) open-width chlorite bleaching on the roller, utilizing the pad-roll principle. The fabrics are padded with cold or warm chlorite solution, rolled up, and stored in a warm room for a certain length of time. Some directions are given for constructing such an installation.

The present state of bleaching in the textile industry.

W. Hundt. *Z. ges. Textil-Ind. 57, No. 21:* 1387-1394 (1955); *in German.* Through *BCIRA 36:* 27 (1956).

The development of bleaching installations since 1938 is reviewed, with reference to the junior-bleaching units of Butterworth and Wiesner-Rapp (U.S.A.), the open-width bleaching plant of the Greenville Steele Co., the Rangette of Rodney Hunt, the continuous open-width bleaching plant of Benteler, Bielefeld, the continuous chlorite bleaching plant (Degussa system), and the Padroll open-width bleaching machine of the Svenska Textil Maskinfabriken, Goteborg.

Photomicrographs reveal incomplete carbonization.

Am. Textile Reptr. 70: 35, 42 (January 26, 1956).

Carbonized fabric is examined to determine the causes for remaining impurities which impair even dyeing and produce seconds.

Processes for delustering textile fibers.

E. Debus. *Textil-Praxis 10, No. 10:* 1032-1036 (1955); *in German.* Through *BCIRA 36:* 30 (1956).

Reference is made to the relevant patent literature from 1929-1943, with titles and short abstracts of the patents.

Development and state of the machines for electrostatic flocking.

F. Hesse. *Reyon Zellwolle Chemiefasern No. 10:* 697-704 (1955); *in German.* Through *BCIRA 36:* 30 (1956).

Modern machine constructions for electrostatic flocking, comprising units for the application of adhesive and flock, respectively, drying of the adhesive, and removal of excessive flock, are described and illustrated.

DYEING AND PRINTING D 2

Yarn dyeing du Pont nylon for carpets.

E. I. du Pont de Nemours and Co., Inc. Wilmington, January, 1956. 2 p. Technical Information Bulletin N-53.

Techniques for simultaneously dyeing and twist-setting carpet yarns.

Stock dyeing du Pont nylon for carpets.

E. I. du Pont de Nemours and Co., Inc. Wilmington, January, 1956. 2 p. Technical Information Bulletin N-52.

Techniques for the level dyeing of nylon staple with Capracyl dyes.

Coloring rags and waste. Part 1.

Dyer 115: 115-116 (January 20, 1956).

Coloring processes in general use for the following types of rag stock: (1) carbonized woolens; (2) uncarbonized woolens; (3) cottons; (4) rayons; (5) jutes; (6) carpeting, mats and similar floorcoverings.

The pigment padding process with indanthrene dyes as jig-padding and jig-developing.

K. Wojatschek. *Textil-Praxis (English ed.) No. 4:* 178-183 (November, 1955).

Preparation of the fabric, jig-padding and developing, oxidation, and aftertreatment of the dyeings carried out on heavy cotton drill are discussed and a practical example is given.

Control of the vat-dyeing process.

L. I. Belienkii and M. E. Kazanskaya. *Am. Dyestuff Reptr. 45:* 54-57 (January 30, 1956).

An account of the establishment of a Russian laboratory method of dyeing control. Translated from the Russian journal *Tekstilnaya Promyshlennost 14, No. 2:* 20-24 (1954). 13 references.

The pad-roll dyeing system.

C. O. Eriksson, N. Landquist, and B. Mellbin (Rydboholms AG). *J. Soc. Dyers Colourists 71:* 894-901 (December, 1955).

A brief discussion is given of the pad-roll system. The dyeing machine, comprising a padding device, an infrared heating zone, and a batching chamber in which constant atmospheric conditions can be maintained, is described. The composition of the direct dye pad solutions is discussed with special reference to dyes and addition of electrolytes, and the pre- and after-treatments of the fabrics are considered. Finally, the laboratory dyeing methods applicable to the pad-roll system are given. 2 references.

Package dyeing of woolen yarns.

Textile Recorder 73: 53-55, 58 (January, 1956).

Technical considerations which influence the choice of equipment and the technique employed are discussed.

Some observations on the continuous dyeing of cotton piece goods with particular reference to vat and soluble vat dyes.

M. R. Fox (Arnold, Hoffman and Co., Inc.). *Am. Dyestuff Reptr. 45:* P38-P40 (January 16, 1956).

Causes and corrective measures are given for faults arising in the continuous application of vat dyes to cotton piece goods. Particular emphasis is placed on dye specking and chemical-pad-control problems. The application of soluble vat dyes by continuous methods is briefly touched upon.

Versatility of water-soluble sulfur dyes.

H. Boothroyd. *Can. Textile J. 73:* 47-49 (January 27, 1956).

Economies from enclosed dye vessels.

A. L. Forrester. *Dyer 115:* 151-155 (January 20, 1956).

A method is described of assessing heat losses through vapor loss and radiation loss from open-top dye vessels. The author recommends the use of hoods, in combination with insulation of metal walls of dye vessels.

Transfer-dyeing method for Acrilan-wool blends.

W. H. Hindle (Chemstrand Corp.). *Textile World 106:* 101, 192 (February, 1956).

Acrilan-wool blends can be dyed to excellent unions in fast shades. Several classes of dyes work well when the bath contains leveling agents that decrease the rate of wool dyeing and when dye-transfer is promoted by low pH and continued boiling.

Fast shades on acetate with azoic and vat dyes.

A. J. Hall. *Skinner's Silk and Rayon Record 30:* 64-70 (January, 1956).

The Hoechst AG method for dyeing acetate fibers with fast azoic dyes so that they will satisfactorily withstand cross-dyeing in wool-acetate blends is described. Vat processes for acetate fibers patented by Celanese Corporation of America, Standfast Dyers and Printers Ltd. and Hardman and Holden are also discussed. 14 patent references.

Considerations in dyeing Acrilan.

W. H. Hindle (Chemstrand Corp.). *Am. Dyestuff Reptr. 45:* P34-P37 (January 16, 1956).

Acrilan has been designed to be dyed with eight different dyestuff classes. The application of these on textiles of 100% Acrilan and also on blends with natural or other man-made fibers is discussed. Especially important is the use of cation-active dyeing assistants to provide transfer of dye from wool to Acrilan in blends to produce piece-dyed union shades using wool dyestuffs for both fibers.

Piece dyeing and finishing of polyacrylonitrile fabrics. Part 3.

J. Müller. *Melliand Textilber. 36, No. 5:* 1023-1028 (1955); *in German.* Through *BCIRA 35:* 807 (1955).

The author discusses new findings as regards possible combinations of Indigosol and Anthrasol dyes, respectively, and gives suitable compositions for jig-dyeings. Results from experiments introducing a Thermosol process into the IF/Casella dyeing method with Anthrasol dyes are reported, reference being made to the effects obtained with intermediate steaming under pressure. Padding methods (combination of padding machine and jig) and continuous dyeing methods are also discussed and the solvent fastness of Indigosol and Anthrasol dyeings on PAN fibers is briefly examined.

The high-temperature dyeing of cellulosic fibers.

A. Schmitz (Farbenfabriken Bayer AG). *J. Soc. Dyers Colourists 71:* 910-917 (December, 1955).

The fundamental principles determining the effect of elevated temperature on the substantivity, the rate of dyeing, and the levelling power of direct dyes are discussed with the aid of exhaustion curves. Since less dye is absorbed above 100°C. than at normal dyeing temperatures, dyeing should be continued in a cooling dyebath after the high-temperature stage. Although the equilibrium concentration of dye on the fiber is attained more rapidly at higher temperatures, the amount of dye absorbed in unit time is lower, provided that the dye liquor has free access to the fiber. Reasons for the more rapid dyeing observed in practice are better levelling power and reduced swelling: at lower temperatures swelling tends to constrict the interstices between the individual fibers, through which liquor can flow. An explanation is given for the surprising fact that the increase in levelling power produced by a given rise in temperature does not depend on its value at the lower temperature. Vat dyes and synthetic fibers are considered briefly. 15 references.

The dyeing and finishing of cellulose triacetate yarns and fabrics.

A. Mellor and H. C. Olpin (British Celanese Ltd). *J. Soc. Dyers Colourists 71:* 817-829 (December, 1955).

The physical and textile properties of cellulose triacetate fibers are such that fabrics made from them, or containing substantial proportions of them, may be permanently set in much the same way as are nylon and Terylene. The dyeing properties of triacetate yarns are compared with those of secondary acetate yarns, both alone and in admixture with other fibers. 7 references.

A new approach to the continuous dyeing of cellulose fabrics with direct cotton dyes.

J. Wegmann (Ciba Ltd). *J. Soc Dyers Colourists 71:* 777-789 (December, 1955).

It has been found that copper-complex polyazo dyes form loose complexes with certain amines, and that these complexes diffuse rapidly and can be applied evenly to the fiber. These amines are displaced during steam fixation in an ager and are subsequently removed by rinsing, which results in a normal dyeing. This method also permits simple and reliable continuous application of highly substantive direct dyes, such as are to be found in the range of copper-complex products. 25 references.

Advances in dyeing and finishing man-made fibers.

P. L. Meunier (E. I. du Pont de Nemours and Co., Inc.). *Am. Dyestuff Reptr. 45:* P8-P11 (January 2, 1956).

A brief review of recent progress and problems. 14 references.

The finisher's viewpoint.

J. A. Komninos (Waldrich Co.). *Am. Dyestuff Reptr. 45:* P5-P7, P11 (January 2, 1956).

A general historical review of trouble-shooting carrier-dyeing of Dacron, some specific synthetic fabric handling problems, and a discussion of additive finishing.

The processes during dyeing of synthetic fibers with disperse dyes.

B. Kramer. *Reyon Zellwolle Chemiefasern No. 9:* 607-609; *No. 10:* 682-687 (1955); *in German.* Summary in *BCIRA 36:* 28 (1956).

Recent developments in coloring synthetic fiber materials.

A. J. Hall. *Textile Merc. 134:* 18-22 (January 6, 1956).

Dyeing of polyacrylonitrile fibers, a pre-treatment with hot acid, use of quaternary phosphonium salts, dyeing of bright blue shades, dyeing nylon in green shades, and an after-treatment for dyed nylon. References are made to patents.

Diffusion measurements in polyamide fibers. Part 1.

W. Luck. *Melliand Textilber. 36, No. 9:* 927-928; *No. 10:* 1028-1033 (1955); *in German.* Through *BCIRA 35:* 807 (1955).

A recording microspectrophotometer for measuring the diffusion coefficient of dyes into the fibers is described and it is shown that the visible zones of dye penetration depend upon the following magnitudes: (1) diffusion coefficient, (2) affinity of the dye for the fiber (distribution coefficient), (3) the layer thickness of the section, (4) absorption spectrum of the dye, and (5) the wavelength of the light used. The values 1-5 can be optimally determined by means of the apparatus described.

Dyeing and finishing of nylon ribbons.

W. S. Willson (British Nylon Spinners Ltd). *J. Soc. Dyers Colourists 72:* 15-18 (January, 1956).

The process of setting nylon fabrics is explained and discussed, with particular reference to plant and methods necessary for nylon ribbons. The best sequence of operations for dyeing and finishing is suggested with emphasis on the precautions necessary to achieve good results. Alternative methods for future development are referred to, with suggestions for quicker or more direct finishing processes. Selection of dyes and bleaching agents, and methods of producing permanent effects in finishing are discussed.

Recent progress in the dyeing of Terylene polyester fiber.

A. S. Fern and H. R. Hadfield (Imperial Chemical Industries Ltd). *J. Soc. Dyers Colourists 71:* 840-856 (December, 1955).

The first part of this paper summarizes existing knowledge of the dyeing of polyester fibers, and indicates how the main developments in dye application have taken place. The second part describes the dyeing of blends of Terylene with wool. 32 references.

The dyeing of viscose rayon cakes with direct cotton dyes.

T. Flanagan (British Enka Ltd). *J. Soc. Dyers Colourists 71:* 790-796 (December, 1955).

The various classifications of direct cotton dyes according to their dyeing behavior are reviewed with reference to their assistance to the viscose rayon cake dyer in his choice of dyes. The interpretation of the graphical data of the dyeing characteristics of direct dyes and its limitations are discussed with particular reference to the value of this system in the selection of dyes for cake dyeing and the formulation of a suitable dyeing method. Some reference is also made to the advantages and limitations of high-temperature dyeing using pressurized machines. 5 references.

Dyeing viscose rayon above 100° C.

D. Cooke (Imperial Chemical Industries Ltd). *Dyer 115:* 59-63, 65-69 (January 6, 1956).

Shorter dyeing times and improved penetration have been achieved with direct dyes on packages. High temperature vat dyeing is also discussed.

Application of Soledon dyestuffs to spun viscose rayon piece goods.

J. B. Jackson. *Textile Mfr. 82:* 32-38 (January, 1956).

Dyeing properties, cloth preparation, dyeing methods and equipment, etc., are discussed.

Sequestering agents in wool and cotton dyeing.

H. E. Millson (American Cyanamid Co.). *Am. Dyestuff Reptr. 45:* P66-P81 (January 30, 1956).

A comprehensive survey. 12 figures. 13 tables. 18 references.

High temperature dyeing of wool.

D. R. Lemin. *Dyer 115:* 31-35 (January 6, 1956).

The advantages of high temperature package dyeing of wool include quick development of full fastness properties and a marked increase in leveling. Degradation precautions are given.

Control of ion concentrations in wool processing solutions. Part 2.

Textile Recorder 73: 59-61 (January, 1956).

Application of pH value in the control of wool dyeing processes. 11 references.

Modern printing methods.

E. C. A. Wolff. *Textil-Rundschau 10, No. 10:* 533-540 (1955); *in German.* Through *BCIRA 35:* 808 (1955).

In this lecture, the author discusses modern printing techniques (roller and screen printing, with a brief reference to the Orbis print and offset printing methods) and prints on cotton, regenerated cellulose, wool, silk, and synthetic fibers.

New techniques in screen printing.

C. Prett. *Melliand Textilber. 36, No. 10:* 1067-1068 (1955); *in German.* Through *BCIRA 35:* 808 (1955).

A new roller-printing machine (developed by KERAG AG, Switzerland) is described, and its advantages are enumerated. Its dimensions are 3 x 5 m, and it is constructed for up to nine colors.

Modern thickening agents for printing.

F. Born. *Reyon Zellwolle Chemiefasern No. 10:* 710 (1955); *in German.* Through *BCIRA 36:* 29 (1956).

Reference is made to Meypro-Gum CR and CRG, a chemically modified vegetable gum which can be used alone or with other thickeners for printing rayon, nylon and Perlon fabrics. Suitable compositions are given.

The alginates Lamitex and Protakyp in textile printing.

G. Torinus. *Reyon Zellwolle Chemiefasern No. 10:* 705-709 (1955); *in German.* Summary in *BCIRA 36:* 29 (1956).

Solvent resistant textile print blankets.

H. H. Bailey (Dewey and Almy Chemical Co.). *Textile Age 20:* 54-55 (February, 1956).

The Darex-Versaprint blanket for printing ranges is described and illustrated.

Better color mixing.

Modern Textiles Mag. 37: 42, 55, 68 (January, 1956).

Planning, equipment, print paste designations, and records of colorshop recipes are discussed.

MECHANICAL PROCESSES D 3

A modern approach to the raising of textile fabrics.

C. S. Whewell (University of Leeds). *J. Soc. Dyers Colourists 71:* 902-909 (December, 1955).

Methods of assessing the effectiveness of raising are discussed, and these are used to express quantitatively the part played by cloth construction and conditions of raising (pH, presence of lubricants and salts, etc.) in determining the response of a fabric to raising. Emphasis is laid on changes in thickness, tensile strength, and pile composition produced during raising. 6 references.

DRYING D 4

How to operate dryers efficiently. Part 1.

L. Walter. *Textile Bull. 82:* 81-83 (January, 1956).

In order to evaluate factors which influence dryer efficiency and thus cost of drying, the author first looks at the fundamentals of drying and drying equipment. Diagrams.

TESTING AND MEASUREMENT E

Technical temperature registration. Part 3. Errors due to misplacement and inherent in the instruments.

C. G. Booy. *Enka Breda Rayon Rev. (English ed.) 9:* 222-231 (December, 1955).

It was shown in the preceding two articles on this subject that, through misapplication or inexpert use, even a good instrument in perfect working order may register incorrectly, due partly to the dynamic and partly to the static properties of the process of heat transfer from the medium to the recorder. Other errors in addition to these may occur if the point of measurement is wrongly placed and if the instrument itself functions inaccurately. In this article a few examples are given of a correct and a wrong installation and the unavoidable errors inherent in the instruments are then considered. 7 references.

FIBERS E 1

Botanical studies in cotton quality. Part 3. Modified sorter technique.

J. P. Evenson (Empire Cotton Growing Corp., Namulonge, Uganda). *Empire Cotton Growing Rev. 33:* 12-15 (January, 1956).

A modification of the standard sorter test is described and results of a series of tests presented. A possible explanation for the results is put forward. The uses and limitations of the test are briefly described. 4 references.

The determination of lignin in flax fiber.

J. F. Couchman. *J. Textile Inst. 46:* T735-T741 (December, 1955).

The effect of the concentration of sulfuric acid, and of variations in the period and temperature of the digestion, on the determination of lignin in flax fiber was ascertained. 16 references.

A simplified cross-sectioning method for observation of skin and core of rayon.

H. Hara, H. Sado and I. Hashimoto (Kanegafuchi Spinning Co., Ltd). *(Letter to the editor). Textile Research J. 26:* 44-46 (January, 1956).

YARNS E 2

Frequency of yarn breakages.

E. Mayer. *Textil-Praxis (English ed.) No. 4:* 169-172 (November, 1955).

A testing device has been developed for predicting yarn weavability. The device takes dynamic weaving stresses into account.

Reliable assessment of yarn properties, etc., from small samples.

Textile Mfr. 82: 15-17 (January, 1956).

A small-scale spinning system developed by Shirley Institute gives very accurate results from samples of raw cotton, etc., weighing less than 1¼ ozs. The technique enables abnormalities to be rapidly detected before bulk material is processed and its scope extends to man-made fibers and blends. Photographs.

Methods of test for textiles. Part 14. Measuring the hardness of cones.

J. W. Y. Heijnis and J. Lako. *Enka Breda Rayon Rev. (English ed.) 9:* 213-221 (December, 1955).

The determination of the hardness of the cone is a useful supplementary check on the winding process in addition to careful inspection. The instrument used for the hardness test is a durometer, which gauges the hardness of the cone by means of a registering meter and a projecting pin. When the bottom surface of the meter is pressed down on the surface of the cone, the measuring pin projecting beyond the base is pressed back; the harder the cone is, the farther does the pin retreat and the higher is the meter reading. Features of the durometer are discussed and data are given for measurements made on cones.

A possible error in using the Zellweger evenness tester.

C. J. van Zwet and W. A. Nienhuis (Vezelinstituut T.N.O.). *J. Textile Inst. 46:* P790-P793 (December, 1955).

In the course of some experiments carried out in a worsted mill, it appeared that the testing of slivers with the Zellweger apparatus, type B5, yielded unsatisfactory and unreproducible results. It was, therefore, decided to investigate the causes of this phenomenon more thoroughly. The difficulties eventually proved to be due to an oversensitivity of the first two slots of the tester. This over-sensitivity could not be revealed by the ordinary test methods, as described in the maker's instructions. It caused a too wide slot to be chosen for the measurements. It was seen from the experiments that the material under test should fill the slot adequately. The sensitivity of the slot was adjusted.

A method for the calculation of the CB(L) curve.

C. J. van Zwet (Vezelinstituut T.N.O.). *J. Textile Inst. 46:* P794-P798 (December, 1955).

The time required for the calculation is considerably shortened by this new method. Each curve was determined in 6-8 man-hours. The method is suitable for routine tests and, apart from an ordinary calculating machine, no expensive apparatus is necessary. A commentary by D. R. Cox is included.

FABRICS E 3

Sheets and pillowcases.

Consumer Reports 21: 21-24 (January, 1956).

In setting up its test program for muslin, percale, and nylon sheets and pillowcases, Consumers Union took into consideration Federal Specifications, standards approved by the American Standards Association, and standards of the American Home Economics Association. Primary concern was with those performance factors which serve as indexes of estimated durability. At least six test samples of each brand were put through ten laundering cycles in automatic washers and tumble-action dryers, and then subjected to tests for abrasion resistance, tensile strength, and elongation. Two or more composite samples of the six samples of each brand were tested, both before and after laundering, to observe the effects on the cotton cellulose in each sample of the alkalis and

bleaches used in the finishing process, and in laundering (fluidity tests). A chart of brand ratings is given.

Strength factor.

B. L. Whittier (North Carolina State College). *Textile Forum 12:* 20-21, 32 (December, 1955).

In establishing a Fabric Strength Factor, the observed strength is converted to a basis related to some characteristic that might influence the strength of a fabric. The factor described in this article is based on a relationship of strength to weight.

The development of warp-knit tricot.

J. C. Meijberg. *Enka Breda Rayon Rev. (English ed.) 9:* 209-212 (December, 1955).

The development of European and American standards for strength, washability, shrinkage, etc., of warp-knit tricot is discussed.

Tests for determining the residual shrinkage value in cotton fabrics on the basis of the Dahlem method.

M. Schnabel. *Melliand Textilber. 36, No. 10:* 1049-1050 (1955); *in German.* Through *BCIRA 35:* 815 (1955).

Experiments were carried out to ascertain to what extent a fabric is still able to shrink after the shrinkage determination by the Dahlem method, viz. for how long shrinking must be continued until no appreciable change in the residual shrinkage value occurs. The results obtained indicate that an almost constant shrinkage value can be reached after treating the fabric for one hour in a boiling, agitated bath containing 3 g soap and 2 g soda per 1 liter of water.

Photometric measurement of fabric regularity.

A. Barella, J. Cegarra, and C. Pujol. *Industrie Textile:* 671-675 (September, 1955); *in French.* Through *BCIRA 36:* 37 (1956).

Among the difficulties, arising from photometric methods for measuring fabric regularity either from its transparency or reflectance, is the effect of the fabric color on the results obtained. The present study shows that, under identical conditions of the photocell, it is possible to eliminate the color factor of the fiber and to measure the transparency of fabrics photometrically, regardless of their color. Comparison can also be made between differently-colored fabrics.

OTHER E 4

Determination of silicones in textile materials.

G. M. Petty (Arkansas Co., Inc.). *Anal. Chem. 28:* 250-251 (February, 1956).

An estimation of the amount of silicone in textile materials is required for the control of this process for the durable waterproofing of textile materials. In a method which requires no unusual or specialized equipment, the textile material, treated with silicone, is wet-ashed, using concentrated sulfuric and nitric acids and, eventually, concentrated perchloric acid. The silica is determined by conventional methods. Attempts to extract cured silicones from textile materials by solvents gave unsatisfactory results. 2 references.

Measurement of the extent of delustering of filament fabrics. Part 2. Reflection of unpolarized light.

R. Jeffries (British Rayon Research Association). *J. Textile Inst. 46:* T759-T777 (December, 1955).

A detailed study has been made of the reflection characteristics of fabrics woven from low-twist filament yarns. As a preliminary, pads of parallel yarn were investigated. It is shown that the main features of the reflection of light from fabrics can be explained in terms of the reflecting properties of the warp and weft considered separately as pads of yarn. The effect of delustering on the reflection characteristics of such pads and fabrics has been investigated; the results confirm the theory and establish the basis of the method for measuring the extent of deluster described and defined in an earlier paper of this series. In this method, the illuminated sample is rotated in its own plane and an orientation-intensity curve is obtained at a selected angle of collection. At this angle of collection, the unscattered reflection from the warp, the unscattered reflection from the weft and the scattered reflection can be separately identified on the curve. The ratios of unscattered light to scattered light are used as indexes of deluster. 12 references.

INDUSTRIAL ENGINEERING F

The technical aspect of textile productivity.

A. Harrer. *Industrie Textile:* 709-718 (October, 1955); *in French.* Through *BCIRA 36:* 44 (1956).

Methods of studying industrial efficiency in various countries are reviewed, with reference to the problems associated with the size of the factory, raw materials (quantity and quality of the

supplies), installations and their maintenance, modernization, new types of material, auxiliary machines, choice of installations, machine operations, technical improvements and progress, and other difficulties connected with modernization.

SCIENCES G

CHEMISTRY G 1

Combination of wool with acids.

B. Olofsson (Swedish Institute for Textile Research). *J. Soc. Dyers Colourists 72:* 19-23 (January, 1956).

Comparisons between different methods of calculating and predicting equilibrium constants for exchange of Cl^- and SO_4^{2-} ions on wool are considered. 12 references.

New technique for applying detergents as spotting agents.

H. E. Stanley and M. E. Davis. *Soap Chem. Specialties 32:* 40-43, 163 (January, 1956).

A new detergency technique was developed for better removal of oily soil from washable garments, particularly soil lines at collar and cuffs. Renex 20 surfactant was found especially effective. Techniques of application were studied. Formulas and packaging were also considered.

Some aspects of the cellulose-phosphate-urea reaction.

A. C. Nuessle, F. M. Ford, W. P. Hall, and A. L. Lippert (Joseph Bancroft and Sons Co.). *Textile Research J. 26:* 32-39 (January, 1956).

The main purpose of this paper is to discuss briefly the structure of the simplest ammonium-phosphate-cellulose complex produced in the early stages of the development of this flameproofing treatment, to indicate points of agreement and disagreement with the work of other investigators, and to consider the nature of the complexes formed when other nitrogen bases are present in the reaction mixture. A few other aspects of the reaction are also discussed. 15 references.

Cellulose studies. Part 20. Comparison of polymolecularity of celluloses degraded by acid hydrolysis and by alkali aging.

Y. Siegwart, L. Rebenfeld, and E. Pacsu. *Textile Research J. 25:* 1001-1004 (December, 1955).

Experimental molecular weight distribution curves are presented for two degraded cellulosic materials. Both samples were degraded to approximately the same average degree of polymerization, the first by the normal viscose-aging process and the other by acid-catalyzed hydrolysis. Comparison of these curves reveals a fundamental difference in the distribution of chain lengths in these two degraded materials. 11 references.

pH.

Ciba Rev. No. 112: 4046-4093 (October, 1955).

The theory of hydrogen ion concentration, p. 4046-4052; *The measurement of hydrogen ion concentration,* by A. Ebert, p. 4054-4064; *pH in scouring and bleaching,* p. 4067-4071; *pH in dyeing,* p. 4072-4077; *pH in textile finishing,* by T. Green, p. 4079-4084; *The significance of pH in leather manufacture,* by P. Koller, p. 4085-4089; *The role of pH in the paper industry,* by K. W. Grundy, p. 4091-4092; *Bibliography,* p. 4093.

Preliminary report on a rapid method of evaluating detergency by means of an ultrasonic transducer.

J. C. Sherrill and W. C. White. *J. Am. Oil Chemists Soc. 33:* 23-28 (January, 1956).

An ultrasonic transducer has been adapted to the purpose of removing soil from standard soiled surfaces in a short period of time, under circumstances in which the actual energy output of the transducer is known. This energy output can be related to the amount of soil removed from an exposed surface. It is suitable for determining the removal of soil on a quantitative basis from the following types of surfaces: (a) various textiles, (b) metallic surfaces, (c) ceramics, and (d) plastics.

Plastics: the year 1955 in review.

Modern Plastics 33: 135-144, 149-156, 234-237 (January, 1956).

A review of the plastics industry during 1955. 498 references.

The sorption of HCl by textile fibers. Part 3. Sorption by proteins and by nylon.

P. Larose (National Research Council, Ottawa, Canada). *Textile Research J. 25:* 1004-1006 (December, 1955).

The sorption of HCl by nylon and by certain proteins is discussed in the light of some recent results, particularly with reference to the amount of HCl retained by the adsorbent on desorption. The changes produced in nylon as the result of HCl sorption are also mentioned, and the heat of sorption has been calculated. 7 references.

Corn starch.

Corn Industries Research Foundation, Inc., 1001 Connecticut Avenue, N. W., Washington 6, D. C., 1955. 44 p. Free.

This booklet reviews what chemists have learned about starch, how starch is extracted from the corn kernel, how it is treated to give it the characteristics required for specific applications, and the almost limitless variations possible in specialty starches and starch derivatives. Of special interest is the section on handling of starches. Testing procedures commonly applied to starch and useful tabular material are presented.

Hydrogen peroxide.

W. C. Schumb, C. N. Satterfield and R. L. Wentworth. Reinhold Publishing Corp., 430 Park Avenue, New York 22, N. Y., 1955. 759 p. $16.50. American Chemical Society monograph no. 128.

A comprehensive treatment of the manufacture, properties, technology and uses of hydrogen peroxide. Over 2500 references.

PHYSICS G 2

A review of static electrification.

D. F. Arthur (British Nylon Spinners, Ltd.). *J. Textile Inst. 46:* T721-T734 (December, 1955).

The mechanism of charge separation between solids is discussed in detail, including the short-range dissipation occuring during separation. The dissipation of electric charges by various methods is described and the action of anti-static agents discussed. A review of experimental methods employed for the detection and measurement of static electrification is presented. 67 references.

Color and instrumentation.

E. W. Rhael. Sandoz Chemical Works, Inc., 61-63 Van Dam Street, New York 13, N. Y. 55 p. Free.

The substance of this work appeared originally as a series of articles in the Sandoz house organ and was designed primarily to acquaint Sandoz personnel with the general atmosphere of instrumentation in the field of color.

Researches on antistatic agents. Part 1. Antistatic agents for nylon.

T. Agatsuma, K. Hosoda, S. Todo and S. Sato. *Bull. Textile Research Inst. (Japan) No. 34:* 31-44 (September, 1955); *in Japanese (English summary).*

Radioactive isotopes and textiles.

C. E. Crompton. *Textil-Praxis 10:* 971-979 (October, 1955); *in German.* Through *Textile Merc. 133:* 734 (October 21, 1955).

This is a comprehensive nine-page survey with 34 references to literature on the subject, dealing with the application of radioactive isotopes to industrial problems. After a brief introduction to the nature of radioactivity and to the general position concerning the supply and application of radioactive isotopes, particular uses in textile research are described. These include thickness measurement, fiber movement during drafting and other processes, color migration during textile printing, investigations into dyeing phenomena, and static electricity generation and elimination. Laboratory design and techniques for handling radioactive materials are discussed and illustrated.

MISCELLANY H

A history of mechanical inventions.

A. P. Usher. Harvard University Press, Cambridge 38, Mass., 1954. Revised edition. 450 p. $9.00.

A chapter on the machinery of the textile industries from 100-1800 is included. Numerous diagrams and illustrations. Bibliography.

Research objectives, methods, and mentalities. Part 1. Productivity in research.

A. C. Nuessle (Rohm and Haas Co.). *(Letter to the editor). Textile Research J. 25:* 1021-1023 (December, 1955).

Textile research in West Germany, 1953-1954.

Melliand Textilber. 36: 861-866 (September, 1955); *in German.* Through *Textile Merc. 133:* 734 (October 21, 1955).

The article surveys in general terms the work of twelve different research organizations situated in Western Germany. Since these organizations are variously sponsored, it is most useful to have their addresses and interests tabulated. The work covered includes spinning, weaving, knitting, finishing, laundering, hat materials, testing and measurement, microscopic and photographic techniques, and the processing of synthetic materials.

Textile education at Massachusetts Institute of Technology.

S. Backer *(Letter to the editor). Textile Research J. 25:* 1023-1024 (December, 1955).

A Japanese looks at the American cotton industry.

M. Kohzaki (Toyo Spinning Co. Ltd). *J. Textile Machinery Soc. Japan 1:* 5-10 (November, 1955): *in English.*

Impressions from a tour of a number of American mills in 1954.

Japan's chemical fiber industry: today and tomorrow.

S. Tashiro. *J. Textile Machinery Soc. Japan 1:* 1-4 (November, 1955); *in English.*

A look at Japan's role in the world chemical fiber industry.

The cotton mills of India 1854 to 1954

S. D. Mehta. Textile Association, Bombay, 1954. 308 pages. Through *Brit. Cotton Ind. Research Assoc. 35:* 153 (1955).

The history (origin and growth) of the cotton industry in India is described.

Annual review of new equipment and supplies and new dyes and chemicals.

Textile World 106: 115-143, 204-213, 218, 222, 226 (February, 1956).

Textile marketing operations research.

L. S. Liang. *Can. Textile J. 73:* 29-33 (January 27, 1956).

Operations research is in business.

H. Solow. *Fortune 53:* 128-131, 148-156 (February, 1956).

A review of the methods and applications of operations research in industry.

The spinner and research

Platts Bull. 8, No. 9: 271-277 (1955).

The research and information services of T.M.M. (Research) Ltd., the central research organization of the Textile Machinery Makers Ltd. group of companies, are described.

Post-war trends in the textile industry.

C. H. Colton. *J. Textile Inst. 46:* P240-P248 (March, 1955).

A lecture.

The small film as aid in motion study.

H. D. Lang. *Textil-Praxis 9, No. 12:* 1152-1155 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 35:* 240 (1955).

The use of photography in the modern textile industry, position and adjustment of the camera during photographing of difficult processing stages, the problem whether the time should be measured by means of a stop watch, and the cost of filming are discussed.

Some desirable textile inventions.

Textile Wkly. 55: 242-245 (Jan. 28, 1955); 327-329 (Feb. 4, 1955); 435 (Feb. 11, 1955).

A report of discussions at the January meeting of the British Association of Managers of Textile Works. Part 1: Spinning; Part 2: Doubling; Part 3: Weaving.

The role of London in the textile industry.

C. H. Colton. *J. Textile Inst. 46:* P673-P680 (October, 1955).

Lecture delivered to the London Section of the Textile Institute.

Textiles at the National Bureau of Standards.

W. D. Appel (U. S. National Bureau of Standards). *Am. Dyestuff Reptr. 44:* P795-P796 (November 7, 1955).

The work of the National Bureau of Standards on textiles deals very largely with properties and their measurement, relationship to the chemical and physical structures of fibers, yarns, and fabrics, and representation in standards. The current work on textiles is outlined and related to the statutory functions of the National Bureau of Standards.

PATENT CHECKLIST

U. S. Patents may be obtained from the U. S. Patent Office, Washington 25, D. C., for 25 cents per copy. Photostatic copies of foreign patents are available. Charges for these photostats are based on the number of pages in the patent.

Col. 111

YARN PRODUCTION B

Suction means for collecting dust from textile machines.

C. R. Ferris. BP 732 356, June 22, 1955. Through *BCIRA 36:* 18 (1956).

Apparatus for oiling or moistening textile fibers.

R. Schlumberger (France). USP 2 733 099, January 31, 1956.

OPENING, PICKING, FIBER PREPARATION B 1

Lap winding mechanisms.

R. Kawazura (to Kanegafuchi Boseki K.K.). BP 731 840, June 15, 1955. Through *BCIRA 36:* 18 (1956).

CARDING AND COMBING B 2

Carding means for producing cotton bats and wadding suitable for conversion into non-woven fabrics.

E. L. Kaufman and R. J. Spellmire (to Stearns and Foster Co.). BP 731 077, June 1, 1955. Through *BCIRA 35:* 801 (1955).

Detaching mechanism in a rectilinear comber.

J. R. Foster (to T.M.M. (Research) Ltd). BP 731 850, June 15, 1955. Through *BCIRA 36:* 19 (1956).

Serrated wire or strip for card clothing.

A. E. Apthorp and A. E. J. Morel (to J. W. & H. Platt Ltd.). USP 2 731 676, January 24, 1956.

Top comb.

J. S. Dudley (to Whitin Machine Works). USP 2 731 677, January 24, 1956.

Cotton card engine drives.

W. P. Schmitter, A. G. Bade and J. W. Fitz-Gerald (to Falk Corp.). USP 2 732 731, January 31, 1956.

Col. 112

DRAWING AND ROVING B 3

Loading device for pressure on top drawing rolls, particularly for spinning machines.

Schiess AG. BP 730 909, June 1, 1955. Through *BCIRA 35:* 802 (1955).

Pressure rolls.

F. Calzone. BP 730 924, June 1, 1955. Through *BCIRA 35:* 803 (1955).

Means for guiding and loading the top drawing rolls.

SKF. Kugellagerfabriken GmbH. BP 731 125, June 1, 1955. Through *BCIRA 35:* 802 (1955).

Spring-weighting device for top drafting rolls.

J. Noguera (to Casablancas High Draft Co. Ltd.). BP 731 191, June 1, 1955. Through *BCIRA 35:* 802 (1955).

Top drawing roll weighting means.

Vereinigte Kugellagerfabriken AG. BP 731 497, June 8, 1955. Through *BCIRA 35:* 802 (1955).

Guides for pairs of top drafting rolls.

SKF. Kugellagerfabriken GmbH (Germany). BP 731 663, June 15, 1955. Through *BCIRA 36:* 19 (1956).

Prevention of localized wear of drafting rollers by the pressure rollers.

C. Gelder (to Fairbairn Lawson Combe Barbour Ltd). BP 731 839, June 15, 1955. Through *BCIRA 36:* 19 (1956).

Double-apron drafting device.

Vereinigte Kugellagerfabriken AG (Germany). BP 731 853, June 15, 1955. Through *BCIRA 36:* 19 (1956).

Clearing rolls.

R. J. Higginbotham and M. E. Herndon, Jr. USP 2 730 770, January 17, 1956.

Top roller for spinning machines.

H. J. Beck and E. F. Schmid (to SKF Kugellagerfabriken Gesellschaft). USP 2 730 771, January 17, 1956.

Top roll.

H. A. Hopkins. USP 2 731 678, January 24, 1956.

SPINNING, WINDING, TWISTING B 4

Controlling the shape of the balloon created when yarn is unwound over-end in a process of twisting, folding, or covering a core.

F. Honig. BP 731 076, June 1, 1955. Through *BCIRA 35:* 803 (1955).

Carrier for the tension pulley of a tape drive for spindles.

SKF. Kugellagerfabriken GmbH. BP 731 244, June 8, 1955. Through *BCIRA 35:* 803 (1955).

Foot-pedal mechanism for wet spinning or doubling frame.

A. Dobson (to Ernest Scragg and Sons Ltd.). BP 731 314, June 8, 1955. Through *BCIRA 35:* 803 (1955).

Means for piecing a high-tenacity continuous-filament rayon yarn to the bobbin of a ring frame for winding.

H. Scowcroft and J. S. Rodgers (to T.M.M. (Research) Ltd.). BP 731 452, June 8, 1955. Through *BCIRA 35:* 798 (1955).

Brackets mounted in a rotary member to support bobbin cradles.

J. H. Larmuth. BP 731 875, June 15, 1955. Through *BCIRA 36:* 20 (1956).

Apparatus for plying yarns.

A. D. Gatling (to Dunlop Tire and Rubber Corp.). USP 2 730 859, January 17, 1956.

Method of and apparatus for plying strands.

A. W. Vibber. USP 2 731 785, January 24, 1956.

Two-for-one twister assembly.

N. E. Klein (to Deering Milliken Research Corp.). USP 2 731 786, January 24, 1956.

Two-for-one twister.

H. R. Marsh (to Saco-Lowell Shops). USP 2 731 787, January 24, 1956.

Automatic tail-cutter for winding machines.

C. D. Lucas (to Deering Milliken Research Corp.). USP 2 732 141, January 24, 1956.

Tension device for thread winding apparatus.

H. Grein (to Barmer Maschinenfabrik AG). USP 2 732 142, January 24, 1956.

Bobbin stripper and method.

R. Ferguson (to Terrell Machine Co.). USP 2 732 609, January 31, 1956.

Slub catcher.

W. L. Perry (to Abbott Worsted Mills, Inc.). USP 2 732 610, January 31, 1956.

Vacuum slub catchers.

S. R. Planer. USP 2 732 611, January 31, 1956.

Method of and apparatus for plying two strands.

A. W. Vibber. USP 2 732 680, January 31, 1956.

Textile plying or twisting device.

N. E. Klein (to Deering Milliken Research Corp.). USP 2 732 681, January 31, 1956.

Method for spinning yarn from staple fiber.

G. J. Kyame. USP 2 732 682, January 31, 1956.

Method and device for winding cops in ring-spinning and ring-doubling machines having a vertically movable spindle rail.

W. Hoffman (to Joh. Jacob Rieter & Cie AG). USP 2 732 683, January 31, 1956.

Automatic bobbin loader for automatic winding machines.

L. L. Hallman (to Terrell Machine Co.). USP 2 733 014, January 31, 1956.

Yarn winding machine having a plurality of yarn-receiving tubes.

J. K. Cochran (to Duplan Corp.). USP 2 733 015, January 31, 1956.

Carrier for condenser bobbins.

J. J. Keyser (to Schiess AG). USP 2 733 020, January 31, 1956.

YARNS B 5

Production of strips of fiber united by an adhesive and their twisting into yarn.

Aberfoyle Manufacturing Co. BP 731 380-381, June 8, 1955. Through *BCIRA 35:* 802 (1955).

Composite sewing thread for minimum seam shrinkage and stitch pucker.

H. C. Donaldson, Jr. (to Cluett, Peabody & Co., Inc.). USP 2 731 788, January 24, 1956.

Novelty knop yarn.

J. B. Holder. USP 2 731 789, January 24, 1956.

Method of producing fibrous covering for elastic thread.

C. C. Smith (to Darlington Fabrics Corp.). USP 2 733 179, January 31, 1956.

FABRIC PRODUCTION C

Web winder.

C. D. Nitchie (to Samuel M. Langston Co.). USP 2 733 018, January 31, 1956.

WARPING, SLASHING, YARN PREPARATION C 1

Device for finding the end of a yarn on a spinning cop or other bobbin.

W. Reiners. BP 731 354, June 8, 1955. Through *BCIRA 35:* 805 (1955).

Winding of conical packages from viscose yarn delivered at constant speed.

G. Severini. BP 731 632, June 8, 1955. Through *BCIRA 35:* 804 (1955).

Compactly arranged warping creel.

Etablissements Cornard et Cie (France). BP 731 785, June 15, 1955. Through *BCIRA 36:* 24 (1956).

WEAVING C 2

Circular loom for weaving hoses.

C. Christiansen and G. O. K. Rusch. BP 730 914, June 1, 1955. Through *BCIRA 35:* 805 (1955).

Let-off motion for looms.

D. Walker (to D. Walker and Co. Ltd.). BP 731 911, June 15, 1955. Through *BCIRA 36:* 25 (1956).

Looms with automatic weft bobbin exchange.

Coeurtys Soc. anon. (Switzerland). BP 731 915, June 15, 1955. Through *BCIRA 36:* 24 (1956).

Means for guiding, supporting and propelling the shuttle of a circular loom with horizontal shed.

Société des Applications Générales d'Electricité et de Mécanique, Soc. anon. BP 732 099, June 15, 1955. Through *BCIRA 36:* 24 (1956).

Lug strap bracket for picker stick.

R. J. Higginbotham. USP 2 731 042, January 17, 1956.

Yarn tension and trap for use in self-threading weaving shuttles.

W. J. Gosselin (to U. S. Bobbin and Shuttle Co.). USP 2 731 043, January 17, 1956.

Devices for threading-in the weft in automatic looms.

K. Schwabe (Switzerland). USP 2 731 044, January 17, 1956.

Apparatus for weaving pile carpets.

F. W. E. Hoeselbarth (to C. H. Masland and Sons). USP 2 731 985, January 24, 1956.

Wire weaving looms.

H. C. Frentzel (to Appleton Wire Works, Inc.). USP 2 731 986, January 24, 1956.

Weft parting mechanism.

L. G. Urquhart (to H. F. Livermore Corp.). USP 2 731 987, January 24, 1956.

Method of weaving an arcuate fabric material formed of a pair of fabrics interconnected by an intermediate thread.

C. E. Neisler, Jr. USP 2 732 865, January 31, 1956.

KNITTING C 3

Circular knitting machine.

E. Jette (Canada). USP 2 730 879, January 17, 1956.

Transfer bit, transfer bit blank and method of producing the bit.

W. Larkin (to Fidelity Machine Co., Inc.). USP 2 730 880, January 17, 1956.

Carrier tube for the thread carrier of a hosiery machine.

E. A. Feustel. USP 2 730 882, January 17, 1956.

Electrically operated circular independent needle knitting machine.

P. L. Thurston (to Interwoven Stocking Co.). USP 2 731 817, January 24, 1956.

Cam mechanism of knitting machines.

J. E. Lynam and B. P. Cooper (to William Cotton Ltd.). USP 2 731 818, January 24, 1956.

Elastic selvage top.

H. E. Crawford. USP 2 731 819, January 24, 1956.

FABRICS C 4

Glass fabrics woven from non-twisted slivers of continuous-filament glass.

W. S. Dickson and T. C. H. Dickson (to Glass Fabrics Ltd). BP 731 119, June 1, 1955. Through *BCIRA 35:* 805 (1955).

Fish netting of uncoated nylon twine made with tight single weaver's knots which are heat-set.

R. Johnson and R. W. Kolb (to Drummondville Cotton Co. Ltd.). BP 731 503, June 8, 1955. Through *BCIRA 35:* 805 (1955).

Overcoming undesirable clinging of garments to the body by construction of the fabric.

A. Draper (to Richard Haworth and Company (Manufacturing) Ltd). BP 731 961, June 15, 1955. Through *BCIRA 36:* 25 (1956).

Flexural rigidity in one direction by the use of stout monofils as part of the weave.

G. W. H. Stevens. BP 732 040, June 15, 1955. Through *BCIRA 36:* 26 (1956).

Light-weight fabric for use as reinforcing portion of strong, tear-resistant coated fabrics.

T. A. Clayton. BP 732 048, June 15, 1955. Through *BCIRA 36:* 26 (1956).

Blanket and napped material therefor.

C. D. Owen, Jr. (to Beacon Manufacturing Co.). USP 2 731 045, January 17, 1956.

Aircraft tow target of an open weave fabric woven of monofilament polyethylene yarn.

M. Bachner (to Firestone Tire and Rubber Co.). USP 2 731 046, January 17, 1956.

Reinforced non-woven glass fabric.

H. R. Hogendobler and A. L. Simison (to Owens-Corning Fiberglas Corp.). USP 2 731 066, January 17, 1956.

Method for forming an isotropic fibrous web.

H. O. Kennette, C. H. Plummer and J. J. Smith (to Chicopee Manufacturing Corp.). USP 2 731 679, January 24, 1956.

Net formed from a series of strands knotted together at intervals.

R. Sonnberger (to Linen Thread Co., Inc.). USP 2 732 750, January 31, 1956.

Method of manufacturing a reinforced porous non-woven glass fibrous web.

W. G. Van Der Hoven (to Owens-Corning Fiberglas Corp.). USP 2 732 885, January 31, 1956.

FINISHING AND CHEMICAL PROCESSING D

Method of eliminating strain in fabric.

C. A. Kindstrand and E. A. E. Pettersson (Sweden). USP 2 730 786, January 17, 1956.

Tetrafluoroethylene polymer bonded heat-resistant fabric.

K. F. Richards (to E. I. du Pont de Nemours and Co., Inc.). USP 2 731 068, January 17, 1956.

CHEMICAL PROCESSES D 1

Flameproofing agents.

Badische Anilin und Soda Fabrik AG (Germany). BP 731 130, June 1, 1955. Through *BCIRA 35:* 811 (1955).

Impregnation of a web of random fibers.

G. M. Schroder (to Steralon Process International Inc.). BP 731 753, June 15, 1955. Through *BCIRA 36:* 18 (1956).

Applying to fibers at some stage of processing prior to spinning an aqueous dispersion of polymerized thermoplastic resin.

E. H. Rossin (to Monsanto Chemical Co.). USP 2 730 790, January 17, 1956.

Reel for the fluid treatment of thread.

T. S. Mayner (to Industrial Rayon Corp.). USP 2 730 889, January 17, 1956.

Process of reacting cellulose textile with beta-propiolactone or beta-isovalerolactone.

R. M. Reinhardt, G. C. Daul and J. D. Reid. USP 2 731 323, January 17, 1956.

Impregnating cellulose textile with a solution of a methylol compound.

B. v. Reibnitz, W. Ruemens and K. Beideck (to Badische Anilin- und Soda-Fabrik AG). USP 2 731 364, January 17, 1956.

Sized and anti-static coated synthetic fiber (silicon compound).

R. F. Caroselli (to Owens-Corning Fiberglas Corp.). USP 2 731 367, January 17, 1956.

Improving the resistance to creasing of a textile material containing cellulose acetate yarn.

F. Fortess and M. Duke (to Celanese Corporation of America). USP 2 731 368, January 17, 1956.

Chemically resistant cotton product impregnated and coated with a benzyl ether of dextran.

G. L. Deniston (to Commonwealth Engineering Co. of Ohio). USP 2 731 369, January 17, 1956.

Recovery of excess acrylonitrile from the cyanoethylation of cotton by steam stripping.

H. F. Karnes and A. H. Gruber (to American Cyanamid Co.). USP 2 731 401, January 17, 1956.

Bonding yarns to polyvinyl chlorides in making composite articles.

B. C. Gardner and E. H. Sharples (to Courtaulds Ltd.). USP 2 732 002, January 24, 1956.

Mothproofing with soluble dicyanamides.

B. D. Gleissner and D. E. Nagy (to American Cyanamid Co.). USP 2 732 277, January 24, 1956.

DYEING AND PRINTING D 2

Dyeing animal fibers in admixture with synthetic linear polyamide fibers.

Sandoz Ltd. (Switzerland). BP 731 005, June 1, 1955. Through *BCIRA 35:* 811 (1955).

Improving the resistance of dyed cellulose acetate textiles to gas fading.

Celanese Corp. BP 731 007, June 1, 1955. Through *BCIRA 35:* 811 (1955).

MECHANICAL PROCESSES D 3

Nappy cloth subjected to scraping blades forming wavy reliefs.

M. Decloux (Belgium). BP 731 305, June 8, 1955. Through *BCIRA 35:* 811 (1955).

Machine for stretching nylon thread.

M. Curry (to American Thread Co.). USP 2 730 789, January 17, 1956.

Cloth shearing mechanism.

C. G. Richardson (to Parks and Woolson Machine Co.). USP 2 732 608, January 31, 1956.

DRYING D 4

Centrifugal machines for removing liquid from fabrics.

W. Hallitt and S. Holmes (to Thomas Broadbent and Sons Ltd). BP 732 198, June 22, 1955. Through *BCIRA 36:* 33 (1956).

Tenter.

J. McCreary. USP 2 729 874, January 10, 1956.

TESTING AND MEASUREMENT E

YARNS E 2

Automatic thread strength testing machine.

A. Marti (to Institut Textile de France). BP 725 731, March 9, 1955. Through *BCIRA 35:* 505 (1955).

Thread strength and friction tester.

E. B. Frederick and F. F. Balas. USP 2 730 891, January 17, 1956.

The Sun Never Sets on Scott Testers*

In use in more than 50 countries

Shipping nearly 40% export

Scott evaluations are world standard, conforming to ASTM and ISO Specifications, providing a universal testing language accepted and understood the world around.

Machines for:
Tensile
Elongation
Hysteresis
Flexing
Twist
Crepeage
Burst
from 0 to 1 ton

* Trademark

Request Literature

SCOTT TESTERS, INC.

94 BLACKSTONE ST., PROVIDENCE, R. I.

SOUTHEASTERN U. S. A. REPRESENTATIVES:

Service and Repair:
SCOTT TESTERS (SOUTHERN), INC.
P. O. Box 834
Spartanburg, S. C.

Sales:
JOHN KLINCK
304 West Forest Avenue
North Augusta, S. C.

REPRESENTATIVES IN FOREIGN COUNTRIES

Scott Testers — Standard of the World